AMENDMENT

Please amend the claims as follows:

1. (currently amended) A method for medical imaging with motion analysis, the method comprising:

(a) identifying a phase of a cyclically varying imaging parameter relative to a physiological cycle for each of a plurality of spatial locations in each of a plurality of image frames, the phase for at least one of the spatial locations in a first image frame different than the phase for another of the spatial locations in the first image frame, the cyclically varying imaging parameter having continuity of starting and end points in a parameter cycle;

(b) displaying a plurality of images corresponding to the plurality of image frames, each of the plurality of images associated with a different time within the physiological cycle and representing at least a two-dimensional region of a patient;

(c) highlighting spatial locations in a first image of the plurality of images associated with a first phase; and

(d) highlighting spatial locations in a second image of the plurality of images associated with a second phase, the second phase different than the first phase and the second image corresponding to the different time than the first image;

wherein the highlighting of (c) is visually substantially the same highlighting of (d) at one of the same spatial locations, different spatial locations and combinations thereof.

2. (original) The method of Claim 1 wherein (a) comprises, for each of the plurality of spatial locations:

(a1) matching a sinusoid to variation in B-mode values during the physiological cycle; and

(a2) identifying the phase of the sinusoid relative to the time within the physiological cycle for each of the plurality of image frames

3. (original) The method of Claim 2 wherein (a1) comprises performing a Fourier transform and (a2) comprises identifying the phase as a phase angle at a fundamental frequency from data responsive to (a1).

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4. (original) The method of Claim 1 wherein (a) comprises identifying the phase for spatial locations comprising single pixels.

5. (original) The method of Claim 1 wherein (b) comprises generating B-mode images.

6. (original) The method of Claim 1 wherein (c) and (d) comprise setting the imaging parameter to a darker shade for spatial locations associated with the first phase and second phase, respectively.

7. (original) The method of Claim 1 wherein (c) comprises highlighting spatial locations associated with the first phase being a first range of phases and (d) comprises highlighting spatial locations associated with the second phase being a second range of phases, the second range being free of overlap with the first range.

8. (original) The method of Claim 7 wherein the first range of phases ends where the second range of phases begins, the second image being immediately subsequent to the first image.

9. (original) The method of Claim 1 further comprising:

(e) highlighting images subsequent to the first and second images, the spatial locations being highlighted in different images being associated with different phases.

10. (original) The method of Claim 1 wherein (b), (c) and (d) comprises highlighting movement of a mechanical heart contraction wave during the physiological cycle being a heart cycle.

11. (original) The method of Claim 1 wherein (c) comprises highlighting associated with the first phase and free of highlighting associated with the second phase and (d) comprises

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highlighting associated with the second phase and free of highlighting associated with the first phase.

12.   (original) The method of Claim 1 further comprising:

      (e)   combining frames of data from multiple of the physiological cycles, the combined frames of data representing a single physiological cycle and being the plurality of image frames.

13.   (original) The method of Claim 1 wherein (b) comprises generating three-dimensional images.

14.   (original) The method of Claim 1 further comprising:

      (e)   synchronizing with a pacemaker.

15.   (original) The method of Claim 1 wherein (c) and (d) comprises showing motion associated with a sick portion of a heart.

16.   (currently amended) A method for ultrasound imaging with motion analysis, the method comprising:

      (a)   identifying a phase of a cyclically varying imaging parameter relative to a heart cycle for each of a plurality of spatial locations in each of a plurality of image frames, the phase for at least one of the spatial locations in a first image frame different than the phase for another of the spatial locations in the first image frame, the cyclically varying imaging parameter having continuity of starting and end points in a parameter cycle; and

      (b)   highlighting pixels in a sequence of images responsive to the plurality of image frames, the highlighting shifting between images of the sequence as a function of a shifting phase interval.

17.   (currently amended) A method for ultrasound data processing with motion analysis, the method comprising:

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(a) acquiring ultrasound data for each of a plurality of spatial locations over a physiological cycle;.

(b) matching a sinusoid waveform with the ultrasound data for each of the pluralities of spatial locations over the physiological cycle, the sinusoid waveform matched for one of the spatial locations at a first time different than the sinusoid waveform matched for another one of the spatial locations at the first time;

(c) isolating information associated at least one frequency band from information associated with a different frequency band for each of the plurality of spatial locations as a function of the matched sinusoid for the respective spatial location; and

(d) adding information from the different frequency band to the isolated information.

18. (original) The method of Claim 17 wherein (b) comprises performing a fast Fourier transform.

19. (original) The method of Claim 17 wherein (a) comprises acquiring the data over a plurality of heart cycles and combining the data to represent a single heart cycle.

20. (original) The method of Claim 17 wherein (c) comprises isolating information associated with an unvarying component and a fundamental frequency component by reducing values for information associated with second harmonics of the fundamental frequency component.

21. (original) The method of Claim 17 wherein (c) comprises isolating information associated with a harmonic of a higher order than a fundamental frequency component by reducing values for information associated with at least the fundamental frequency component.

22. (original) The method of Claim 17 wherein (a) comprises acquiring data representing contrast agents.

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23.　(original) The method of Claim 17 further comprising:

(e)　generating images of intensities as a function of time responsive to (d).

24.　(original) The method of Claim 23 wherein (e) comprises generating three-dimensional images.

25.　(original) The method of Claim 17 wherein (d) comprises adding the information from the different frequency band to the isolated information in the frequency domain.

26.　(original) The method of Claim 17 wherein (d) comprises adding the information from the different frequency band to the isolated information in the spatial domain.

27.　(original) The method of Claim 17 wherein (b) comprises:

(b1)　transforming the ultrasound data for each of the plurality of spatial locations into a frequency domain;

(b2)　isolating information associated with at least one frequency band from information associated with a different frequency band for each of the plurality of spatial locations; and

(b3)　inverse transforming the isolated information.

28.　(currently amended) A method for ultrasound data processing with motion analysis, the method comprising:

(a)　acquiring ultrasound data for each of a plurality of spatial locations over a physiological cycle;

(b)　matching a sinusoid waveform with the ultrasound data for each of the pluralities of spatial locations over the physiological cycle, the sinusoid waveform matched for one of the spatial locations at a first time different than the sinusoid waveform matched for another one of the spatial locations at the first time; and

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(c) isolating information associated at least one frequency band from information associated with a different frequency band for each of the plurality of spatial locations as a function of the matched sinusoid <u>for the respective spatial location; and</u>[[.]]

(d) detecting a boundary from data responsive to (c).

29. (original) The method of Claim 28 wherein (b) comprises:

(b1) transforming the ultrasound data for each of the plurality of spatial locations into a frequency domain;

(b2) isolating information associated with at least one frequency band from information associated with a different frequency band for each of the plurality of spatial locations; and

(b3) inverse transforming the isolated information.

30. (original) The method of Claim 28 wherein (d) comprises detecting the boundary from amplitude data.

31. (original) The method of Claim 28 wherein (d) comprises detecting the boundary from phase data.

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